

STUDY OF CAREER AND TECHNICAL EDUCATION

Findings and Recommendations

Finding #1 – Virginia’s Career and Technical Education (CTE) program is nationally recognized for its industry credentialing and its lead in student attainment. Virginia’s Board of Education has approved 151 credentials. Virginia utilizes three types:

- State Licensure;
- NOCTI (National Occupational Competency Testing Institute); and
- Pathway Exams

In Virginia’s CTE program, business representatives indicate that industry certifications, particularly state licensure, are an extremely valuable component of CTE. However, other industry credentials, while valuable, are not as well-known to, or acknowledged by, employers. Some of these credentials are also not acknowledged by Virginia’s community colleges or universities. This may include some of the credentials that fall under NOCTI. Additional education to employers about the value of these credentials, as well as input from labor and industry would be helpful to bridge this gap.

Recommendations

- 1. Support the Department of Education and the Board of Education’s Career Advisory Committee’s plans to work with local Career and Technical Education advisory committees to educate the business community about the benefits of industry certifications, including National Occupational Competency Testing Institute (NOCTI) certifications.**
- 2. Request the Secretary of Education and the Virginia Career Pathways System Working Group identify those credentials and certificates which are valued by business and industry and are appropriate for inclusion in Virginia’s CTE Pathways. Regional variation will be acknowledged in this review. A report on the status of this review will be submitted to the Virginia Commission on Youth, the Board of Education and the Council on Career and Technical Education prior to the 2011 General Assembly Session.**

Finding #2 – According to information provided by the University of Virginia’s Weldon Cooper Center, employers desire entry level workers who understand the workplace, have a positive attitude and work ethic, and have appropriate communication skills. Work experience and industry credentials are also highly desired by employers. Factors related to school may actually rank last. Students need to have “workplace readiness skills” those crucial skills which include punctuality, work ethic, how to count out change, etc. Employers in trades, industry, as well as white-collar industries frequently have difficulty finding workers with these traits. Roundtable participants noted that once employers conduct a credit check, a criminal background check and a drug screen, as many as 80 percent of all applicants may be eliminated.

Virginia’s Workplace Readiness Skills (WRS) curriculum was developed to teach 13 workplace readiness skills to Virginia’s CTE programs. The WRS is designed for use by teachers to help students achieve validated, specific tasks and/or competencies considered essential for success in the world of work. These activities address all 13 of the Virginia WRS, including fostering a good work ethic. Currently, in order for school divisions to be reimbursed for the testing costs of the WRS, a separate computer literacy requirement, IC3, must be incorporated. This has been described as a cumbersome process in that it necessitates two separate tests.

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In 2008, the process of updating Virginia's WRS from 13 to 21 skills commenced. These skills will be fully implemented as part of the CTE curriculum in the fall of 2010. A revised NOCTI WRS to replace NOCTI WRS + IC3 test will be presented to the Board of Education in January 2011. A new test will not be operational until 2011, pending approval of the Board.

Recommendation

- 1. Introduce a resolution to support the Department of Education's update of Virginia's Workplace Readiness Skills (WRS) and test revision. The resolution would request that the status of the WRS update and its accompanying assessment instrument be shared by the Department of Education with Virginia's network of Career and Technical Education administrators and school counselors during all upcoming conferences and trainings. The resolution would also encourage local school divisions to collect information compiled from the WRS so that it may be shared with the business community.**

Finding #3 – Virginia's Career Readiness Certification (CRC) is a nationally recognized certification and has been in place in Virginia since 2004. The CRC is an assessment-based credential that gives employers and career seekers a uniform measure of key workplace skills. The CRC also verifies to employers anywhere in the United States that an individual has essential core employability skills in Reading, Math, and Locating Information and this is done through three WorkKeys Assessments. The CRC is an easily understood and nationally valued credential that certifies the attainment of these workplace skills. Businesses directly connect the CRC with productivity, quality, business processes, and profitability. The CRC in Virginia is supported by the Virginia Workforce Council, Chamber of Commerce, AFL-CIO and the Virginia Manufacturers Association.

The CRC effectively addresses the work readiness curriculum requirements in numerous CTE courses. CRC is an invaluable addition to high school CTE certifications across all programs and regions in the state. A major healthcare system – Inova Health System - now requires CRC for all prospective new hires in allied health positions; clinical care tech, CNA, patient transport, etc. The same certification is required by the Virginia Council on Advanced Technology Skills (VCATS) initiative for Advanced Manufacturing Technician positions in biotech and semi-conductor manufacturing in Virginia. These are both are high growth areas for Virginia's economy. CRC is a natural solution and a tool for success in CTE. The CRC is currently not included on the list of recognized industry credentials for Virginia's CTE program.

Recommendation

- 1. Request the Virginia Community College System, the Virginia Workforce Council and the Department of Education include the Career Readiness Certification (CRC) with the Academic and Career Plans for Career and Technical Education Pathways, as appropriate.**

Finding # 4 – The traditional education model in Virginia places a tremendous amount of emphasis on college preparatory classes and liberal arts. The realities of the labor market have been ignored by this model. The educational system has devoted a tremendous amount of focus to those academic courses which only prepare students to enter four year colleges and has not given students the experiences they need to qualify for today's jobs. Moreover, there is not as much emphasis, or integration into the educational system, of the continued need for trades, manufacturing or other CTE pathways. These pathways lead to jobs which are actually more secure and generate strong earnings

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and a strong workforce. The U.S. Department of Labor tells us that 76% of the jobs created over the next 20 years will not require a four-year college degree. Job growth in skilled trades is expected to surpass employment growth in most other occupations. According to the Virginia Manufacturers' Association, there may be a shortfall in trained workers, as high as 12,000, between 2007 and 2012. In addition, students very much need workplace preparation in high school because they are not obtaining workplace experience outside of school. The employment rate for teens is the lowest ever recorded in post-World War II history. Most jobs will require technical education over a traditional 4-year degree.

While Virginia has an extremely strong CTE program, there is still a stigma associated with CTE. CTE provides pathways for young people to be life long learners. CTE offers challenging courses for careers that did not exist until recently. These include:

- Imaging Technology
- Internet Marketing
- Networking
- Robotics
- Sports Medicine
- Science, Technology, Engineering and Math (STEM)

In addition, over the past ten years, the percentage of ACT-tested students who said they were interested in majoring in engineering has dropped steadily from 7.6 percent to 4.9 percent. The Governor's Career and Technical Academies in Virginia are programs designed to expand options for the general student population to acquire STEM literacy and other critical skills, knowledge and credentials that will prepare students for high-demand, high-wage and high-skill careers in Virginia. The Governor's Career and Technical Academies have high standards and are aligned with Virginia's STEM goals.

While CTE programs provide an economic benefit to both students and to the Commonwealth, they still suffer from an image problem. While there is information available about Virginia's CTE programs, few parents or the business community are aware of DOE's 16 pathways and 79 career clusters. There is a need for a media campaign/strategic plan to highlight the benefits of CTE. Schools, counselors and parents do not know the benefits of CTE and how their children can access it. According to a study conducted in Michigan, the most influential people upon a student regarding a decision to enroll, or not to enroll, in CTE are friends and parents. To help erase the stigma of CTE, a message sharing the rigor and relevance of CTE should be taken to these individuals.

Recommendations

1. **Support the Board of Education's Career and Technical Education Advisory Committee's efforts to advocate and market CTE.**
2. **Support the Department of Education revisions to the *R U Ready Parent's Guide* and request that it be shared with parents of 7th grade students, rather than 8th grade students.**
3. **Request that the Department of Education consider making the *R U Ready Guide for Students*, which provides information about students' educational opportunities, available to high school students in their sophomore year, rather than in their junior year.**
4. **Request that the Virginia Association of School Counselors Association and Virginia PTA/PTSO include information on Virginia's rising labor force needs, as well as the**

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benefits of Virginia's Career and Technical Education programs, in all trainings, newsletters or other appropriate media. Also request that this message be shared with parents of children entering school for the first time.

5. Support the Virginia Workforce Investment Council and the local workforce boards' work with local school divisions to communicate the value of Virginia's CTE programs.
6. Request the Department of Education include in the training materials for Academic and Career Plans, as well as in the sample plan:
 - a. the value of work-based learning for students, such as for internships, job shadowing, mentorships, projects, service learning or a combination;
 - b. the value of skilled occupations for students; and
 - c. information for students and parents regarding the rising need for employees to possess an industry credential or certification.
7. Support the Department of Education's efforts to promote private-public partnerships which offer real-world experiences to students. These partnerships include, but are not limited to, 4-H, Ag in the Classroom and Junior Achievement.
8. Support the Department of Education's efforts to promote the Governor's Career and Technical Academies in Virginia as programs designed to expand options for the general student population to acquire Science, Technology, Engineering and Math (STEM).

Finding #5 – Dual enrollment is a viable and low cost pathway to a job and many CTE courses qualify students for dual enrollment credit. Dual enrollment credit encourages students to graduate from high school and makes further education affordable. However, there is confusion across the Commonwealth about the processes for dual enrollment. While there is a plan for dual enrollment between Virginia's public schools and the VCCS, there is confusion about the requirements and the framework for establishing dual enrollment arrangements.

There is also confusion with the requirements for teacher credentials pertaining to dual enrollment. It is perceived that dual enrollment instructors for CTE must have a master's degree and 18 credit hours in their subject area, which is the same qualification required for a community college instructor. While this is true for dual enrollment for core academic courses, this is not always the case for CTE dual enrollment course offerings. Other qualifications, such as advanced industry experience, industry experience or additional bachelor's level courses, may suffice. .

There is also no template for statewide CTE articulation agreements. In 2005, there were over 426 articulation course agreements in effect between school divisions and community colleges; however, these agreements generally do not extend beyond a single community college service region. Also, there are significant differences in both the requirements of community colleges for students to receive articulated credits and the intake processes through which community colleges advise and award credits to students qualified to receive college credits for high school course work. CTE administrators, school officials and business representatives, assert that it would be helpful to have portability of credentials and transparency. However, it is important to acknowledge the significant local variability among the course offerings which currently exists within the Commonwealth's high schools and community college system.

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1. **Request the Chancellor of the Virginia Community College System (VCCS) provide guidelines on the requirements for credentials needed by Career and Technical Education (CTE) instructors to satisfy dual enrollment requirements. Request, once these guidelines are completed by VCCS, that they be shared with the Department of Education and the Board of Education's Advisory Council for CTE, the Virginia CTE Resource Center and the Virginia Association for Career and Technical Education (VACTE).**
2. **Request an update on the progress of the Task Force for HJR 125 (2004) in developing a template for statewide articulation agreements for Career and Technical Education. The status update will include information on the feasibility of establishing a unified agreement for dual-enrollment in the Commonwealth, the barriers of pursuing uniform implementation of dual enrollment, and the costs of standardizing dual enrollment.**

Finding #6 – CTE is one program area that is impacted by teacher shortages. The availability of teachers in critical shortage areas and hard-to-staff schools continues to be a major challenge in the nation and in Virginia. According to the VACTE, in 2006-2007, specific CTE teacher shortages occurred in Business and Information Technology, Family and Consumer Sciences, Trade and Industrial Education, and Technology Education. The only critical shortages ranking higher than CTE were in special education and mathematics.

Local school divisions face increasing difficulty in finding qualified teachers for CTE programs, and this shortage is predicted to become more serious within the next five years. CTE administrators collectively project 613 openings within five years—more than eight times as many as in 2006-2007. As student enrollment in CTE programs continues to grow and workforce readiness skills become an increasingly clear priority for Virginia's businesses, highly qualified CTE teachers must be available to keep pace with the demand.

Recommendations

1. **Support the Department of Education's efforts to address the shortage of Career and Technical Education teachers in the Commonwealth.**
2. **Support the efforts of the Board of Education's Advisory Committee for Career and Technical Education (CTE) to address teacher shortages, including teacher recruitment and the involvement of local CTE advisory committees.**

Finding #7 – Virginia's Career Coaches are community college employees based in local high schools with the mission to help high school students define their career aspirations and recognize postsecondary programs and services that can help students achieve their goals. The VCCS administers the Career Coach program. Career Coaches target high school students who most need career planning services; those middle students who will comprise the mainstay of Virginia's workforce but often graduate from high school without a definitive plan or resources for postsecondary education and training. Currently, Coaches are located in all community college service areas. The types of services provided align with the VCCS Career Coaching model and include: contacting students, providing one-on-one/small group coaching, administering career assessments, developing career plans, providing assistance with college placement, and referring students to early college placement programs, such as dual enrollment or Tech Prep. Coaches also connect students to local employers who serve as career advisors and mentors to students. The Career Coaches program is funded by both VCCS and local educational institutions.

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Since its inception in December 2004, the program has increased dramatically from 11 coaches in 13 high schools to approximately 110 coaches in over 140 high schools. Analysis of data indicates that the Career Coach program positively impacts short and long term education goals of students and the high schools that coaches work in. Some of the impacts of the program in 2007-08 include:

- Increased enrollments in postsecondary education;
- Increased enrollments in early college programs such as dual-enrollment and Tech Prep;
- Increased enrollments in postsecondary CTE programs; and
- Increased completion of postsecondary education programs.

Students would likely realize major benefits if Career Coaches were situated in every Virginia high school, but there is currently not funding available to accomplish this.

Recommendation

1. **Support the continuation and expansion of Virginia Community College System (VCCS) Career Coaches program and request the Virginia Association of School Superintendents, the Virginia Association of Secondary School Principals and the Virginia School Board Association include information on the effectiveness of the Virginia Career Coach Program in upcoming conferences and trainings, as appropriate.**

Finding #8 – During the 2010-2011 academic year, all schools in Virginia are to develop a personal Academic and Career Plan (ACP) for each seventh-grade student. These ACPs are to be completed by the fall of the student's eighth-grade year. The components of the ACP will include the student's program of study for high school graduation and a postsecondary career pathway based on the student's academic and career interests. The ACP will be developed based on guidelines established by the Board of Education and signed by the student, student's parent or guardian, and school official(s) designated by the principal. The ACP is to be included in the student's record and may be reviewed and updated before the student enters the ninth and eleventh grades.

While the ACP is designed to maximize student achievement by helping the student identify their goals so they can begin to map out a plan to accomplish them while in middle and high school, school divisions are concerned about the implementation of the ACP with budget shortfalls and the burden already placed on school staff and guidance counselors. However, the VCCS has developed a tool that will help school divisions achieve the goals set forth in the ACP. The Virginia Education Wizard (www.vawizard.org) is a one-stop, online resource that brings together information about careers, curriculum and financial assistance. Users can visit the Wizard to get tailored information about where they are in their career journey and create a path that will get them to future goals. On Wizard, students can identify career paths; curriculum choices, including potential transfers to four-year institutions; and financial assistance. The student may utilize the Virginia Education Wizard to construct a personal profile which can link their career interests with selected degree programs. The Wizard provides comprehensive, real-time information. While the Virginia Education Wizard is currently available online, Wizard 3.0 will be launched in the summer of 2010 and will possess the feature which allows school divisions to create ACPs for their students. The guidelines for the ACP will be merged with the Virginia Education Wizard 3.0 to offer school divisions a user-friendly and comprehensive tool. The Wizard will offer school divisions a comprehensive strategy to fulfill the requirements of the ACP without any additional programming costs.

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1. **Support the Department of Education and the Virginia Community College System (VCCS) plan to integrate and implement the Academic and Career Plan (ACP) with the Virginia Education Wizard.**
2. **Support the Department of Education's efforts to provide information in upcoming training and training materials on Virginia's Career Coaches, including ways Career Coaches can assist in the implementation of the Academic and Career Plan (ACP) and school divisions may establish partnerships with the Virginia Community College System (VCCS) to support the Career Coaches.**

Finding # 9 – Students with disabilities in special education may benefit from increased participation in CTE programs. Research by the National Transition Network shows that students with disabilities in secondary CTE programs were less likely to drop out and more likely to be employed, to have paid competitive jobs, and to work full time after high school. Students with disabilities who had work experience during high school had better employment outcomes, higher wages, more hours and more continuous employment. Furthermore, students with disabilities mainstreamed into regular CTE or academic classrooms obtained paid competitive jobs more often and felt better prepared to keep their jobs. There are challenges to coordinating the distinct requirements of CTE and special education. However, bridging this gap can help students with disabilities obtain higher levels of independence and economic stability. CTE should be part of the solution for educating students with disabilities.

Recommendation

1. **Request the Board of Education's State Special Education Advisory Committee address barriers to appropriate placements of students with special needs into Career and Technical Education (CTE) programs by developing (or sharing) written guidelines for use by school personnel.**